

REMARKS/ARGUMENTS

Claims 1, 2, 5-11, 14-19 and 31 are pending in the application. The claims have been rejected as obvious from the combination of Konno (US5,305,388) and Brokaw (US 3,564,445).

The Invention

The present invention is directed to speakers that can attach to a computer. The speakers have minimal controls, such as an on/off switch and a volume control. Circuitry for bass equalization is included in the speaker housing to automatically adjust the boosting of the bass depending on the volume, without additional control needed from the user. This is done using a negative feedback path for a bass boosting amplifier that reduces a gain of the amplifier as the amplitude of the audio electrical signal increases.

Cited Art

Konno describes an base compensation circuit for an equalizer (such as for a stereo receiver) which includes manual user controls to adjust the relative amounts of bass and treble (the variable resistors 8 and 10).

Brokaw describes a circuit for eliminating crossover distortion in solid state amplifiers. A diode pair (Fig. 4) in a negative feedback loop of the amplifier to control the level of the amplifier output in the same manner as the feedback amplifier of Fig. 2. This feedback amplifier is used to pre-distort the input signal to compensate for the crossover distortion (col. 3, lines 35-37).

Rejection

Konno relies on use manual adjustments, and does not provide an automatic system as provided in the claimed invention. The invention is directed to speakers constrained in the amount of action a user provides. Konno does not show the diode pair as recognized in the office action. Konno also does not provide a feedback path "which reduces a gain of said amplifier as said amplitude of said audio electrical signal increases" as provided in claim 1, as amended.

It would not be obvious to combine Brokaw with Konno to arrive at the claimed invention. Brokaw deals with eliminating crossover distortion, not limiting bass boost. There are many examples of opposed diodes in the art. What is lacking is the recognition of the use of such an arrangement for computer speakers to limit bass boost at high signal amplitudes. The present invention is directed to limiting the bass boost as amplitude increases, which can be done with opposed diodes. It is not simply the use of opposed diodes in a amplifier negative feedback path. There is no suggestion in either reference to combine them. One of skill in the art would see the diodes described as a compensation circuit in Brokaw, and would not be motivated to modify Brokaw and apply it to Konno to limit bass boost.

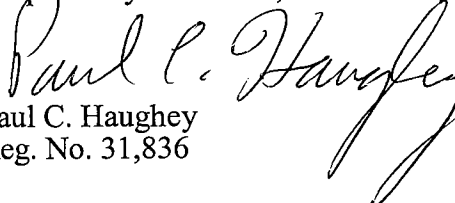
Claim 11 has been amended to focus it on a speaker, and make clear that the claim is not directed to a user adjustable equalization circuit in a stereo receiver, such as is shown in Konno. Claim 11 also has the distinctions from Konno and Brokaw discussed above.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,


Paul C. Haughey
Reg. No. 31,836

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
Attachments
PCH:rgy
61224961 v1